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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,719	09/17/2003	Masaya Kuwahara	10407-61US (A3035MT-US1)	4370

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EXAMINER	
LAMB, CHRISTOPHER RAY	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/664,719	KUWAHARA ET AL.	
	Examiner	Art Unit	
	Christopher R. Lamb	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,8-20,22-25 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-25 and 29* is/are rejected.

7)☒ Claim(s) *1,3 and 8-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 March 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/20/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed March 20th, 2007 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Specifically, there is no explanation of the relevance of the article, "Thoroughly Dissecting the Next Generation Optical Disc Technology." There is an English translation of one table in the article, but the relevance of that table or the article to the application is not clear.

Drawings

2. The drawings were received on March 20th, 2007. These drawings are acceptable.

Claim Objections

3. Claims 1, 3, and 8-20 are objected to because of the following informalities: in claim 1, line 15, "the recorded area" should be "a recorded area." Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 22, 24, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa (US 5,422,609) in view of Hiroki (US 5,559,770).

Regarding claim 22:

This rejection has been repeated from the previous Office Action.

Yanagawa discloses a tracking control method for controlling a light beam such that the focal point of the light beam is located right on a target track on a storage medium by detecting how much the focal point has shifted from the target track, the method comprising the steps of:

calculating a first gain of a tracking control loop when the focal point of the light beam is located on a recorded area of the storage medium on which data has already been written (column 4, lines 20-35);

calculating a second gain of the tracking control loop when the focal point of the light beam is located on an unrecorded area of the storage medium on which no data has been written (during test writing: column 4, lines 20-35); and

adjusting the gain of the tracking control loop according to the first and second gains by determining whether or not data is being written on the storage medium (column 4, lines 35-55).

Yanagawa does not disclose:

Calculating the gains at an arbitrary frequency.

Hiroki discloses:

Calculating the gains at an arbitrary frequency (column 9, lines 40-60). Hiroki discloses that this is necessary to keep the control loops stable (column 3, line 65 to column 4, line 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Yanagawa calculating the gains at an arbitrary frequency, as taught by Hiroki.

The motivation would have been to keep the control loops stable.

Regarding claim 24:

The method of Yanagawa in view of Hiroki further comprises the step of turning the unrecorded area into the recorded area by writing data on the unrecorded area (one of the gain calculations takes place during recording).

Regarding claim 29:

Yanagawa in view of Hiroki discloses a computer readable storage medium having stored thereon a program that is defined so as to get the steps of claim 22 executed by a computer (Yanagawa Fig. 1: the system is controlled by a microcomputer).

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa in view of Hiroki as applied to claim 22 above, and further in view of Nijboer et al. (US 6,704,263).

Yanagawa in view of Hiroki discloses a method as discussed in the rejection of claim 22.

Yanagawa in view of Hiroki does not disclose the step of turning the recorded area into the unrecorded area by erasing data from the recorded area.

Nijboer discloses wherein when a power calibration area is full, it must be erased before the next sequence of power calibration procedures can be performed (column 3, lines 25-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Yanagawa in view of Hiroki wherein the recorded area is turned into the unrecorded area by erasing data from the recorded area.

The motivation would be to enable performing a power calibration procedure (necessary for recording on the disc, and to Yanagawa in view of Hiroki's calibration procedure) when the power calibration area is full.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. (US 4,890,273) in view of Hiroki et al. (US 5,559,770).

Regarding claim 23:

Takeuchi discloses:

A tracking control method for controlling a light beam such that the focal point of the light beam is located right on a target track on a storage medium by detecting how much the focal point has shifted from the target track (column 7, lines 1-35), the method comprising the steps of:

adjusting the gain of the tracking control loop according to a first and second gains by determining whether or not data is being written on the storage medium

(column 7, lines 35-45; Takeuchi discloses there may also be a recording mode where the gain is switched in column 4, lines 55-65); and

determining, by the intensity of the light beam that has been reflected from, or transmitted through, the storage medium, whether the focal point of the light beam is located on the recorded area or on the unrecorded area (column 7, lines 35-45; column 5, lines 1-25).

Takeuchi does not disclose:

calculating a first gain of a tracking control loop at an arbitrary frequency when the focal point of the light beam is located on a recorded area of the storage medium on which data has already been written;

calculating a second gain of the tracking control loop at the arbitrary frequency when the focal point of the light beam is located on an unrecorded area of the storage medium on which no data has been written yet.

Hiroki discloses:

calculating a gain of a tracking control loop at an arbitrary frequency (column 10, lines 55-65, where the details are similar to column 8, line 40 to column 10, line 30).

Hiroki discloses that unless the gain is calculated reading and recording is not satisfactory (column 3, line 55 to column 4, line 5).

Hiroki's system only has one gain. However, Takeuchi's system has several gains, including one for when the focal point of the light beam is located on a recorded area of the storage medium on which data has already been written (column 5, lines 1-

25), and one for when the focal point of the light beam is located on an unrecorded area of the storage medium on which no data has been written yet (column 5, lines 1-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Takeuchi wherein each of the gains is calculated at an arbitrary frequency, as taught by Hiroki.

The motivation would have been to satisfactorily read and write from the disc.

Then, Takeuchi in view of Hiroki includes:

calculating a first gain of a tracking control loop at an arbitrary frequency when the focal point of the light beam is located on a recorded area of the storage medium on which data has already been written (since this gain is for the recorded area it must be calculated in a recorded area);

calculating a second gain of the tracking control loop at the arbitrary frequency when the focal point of the light beam is located on an unrecorded area of the storage medium on which no data has been written yet (since this gain is for the unrecorded area it must be calculated in an unrecorded area).

Allowable Subject Matter

8. Claims 1, 3, and 8-20 are objected to as noted to above, but would be allowable if rewritten to overcome the objection.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1:

The prior art of record does not disclose a proportionality constant wherein a ratio of the gain that has been calculated by the tracking gain calculating section for the recorded area, on which the data has been written, to the gain that has been calculated by the tracking gain calculating section for an unrecorded area, on which the data has not yet been written, is used as the proportionality constant.

This limitation in combination with the other limitations in the claim renders it allowable over the prior art of record.

Regarding claims 3 and 8-20:

These claims are allowable due to their dependence on claim 1.

Response to Arguments

10. Applicant's arguments filed March 20th, 2007, have been fully considered. Each argument will be addressed separately.

11. Regarding the patentability of independent claim 1 over Shinkai in view of Hiroki:

Applicant's arguments are persuasive. In particular, Shinkai in view of Hiroki does not disclose calculating a ratio of two gains. This rejection has been withdrawn.

12. Regarding the patentability of independent claim 1 over Kusomoto in view of Takeuchi and Yanagawa:

Applicant's arguments are persuasive. In particular, Kusomoto in view of Takeuchi and Yanagawa does not disclose calculating a ratio of two gains. This rejection has been withdrawn.

Claim 1 and its dependent claims are now in allowable form except for the objection to claim 1 above.

13. Regarding the rejection of claim 22 as unpatentable over Yanagawa in view of Hiroki:

Applicant's argument is not persuasive.

Applicant argues that Yanagawa does not disclose "anything whatsoever regarding whether an area of a storage medium is recorded or unrecorded," and the claim is thus patentable over the applied references.

Yanagawa discloses wherein the gain of the tracking control loop is switched depending on whether the apparatus is reproducing or recording. Yanagawa discloses that the disc may be an erasable disc or it may be a write-once disc (column 1).

Yanagawa calculates a first gain during a recording operation (column 4, lines 20-30). In a write-once disc, recording can only take place in an unrecorded area, and therefore the light beam must be located on an unrecorded area during this calculation.

Yanagawa calculates a second gain during a reproducing operation (column 4, lines 25-40). Since the apparatus is reproducing, it must be in a recorded area: otherwise there would be nothing to reproduce.

Once the gains are calculated, Yanagawa switches between them based on whether data is being written on the storage medium, just as in the claim.

Hiroki, of course, has been relied upon to teach calculating the gains at an arbitrary frequency.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 6:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 5/22/07

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